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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/676,107	09/29/2000	Kurt P. Weckstrom	2532-00231	2219

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DANIEL D. FETTERLEY  
ANDRUS, SCEALES, STARKE & SAWALL, LLP  
Suite 1100  
100 East Wisconsin Avenue  
Milwaukee, WI 53202-4178

EXAMINER

ROSENBERGER, RICHARD A

ART UNIT PAPER NUMBER

2877

DATE MAILED: 12/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/676,107

Applicant(s)

WECKSTROM, KURT P.

Examiner

Richard A Rosenberger

Art Unit

2877

-- Th MAILING DATE of this communication app ars on the cover sh t with the correspond nc addr ss --

## Period f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-65 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reader et al (US 3,970,430) in view of the admitted prior art in the specification, Passaro et al (US 4,692,621), and Harte et al (US 3,792,272).

The Reader et al reference discloses a sensor assembly for the detection of NO<sub>2</sub> with a light source that gives light in the wavelength range of 410-600 nm (column 4, line 51-53). There is a sample chamber having an inlet conduit for supplying a flow of the gas to be measured, an outlet conduit, and a detector for receiving the light passed through the sample to produce a signal representative of the NO<sub>2</sub> content of the sample. Using an optical sensor to measure gas breathed by a patient is known, as shown, for example, by Passaro et al. Placing an NO<sub>2</sub> detector in the air path of a patient, when the NO<sub>2</sub> content is desired to be known, would have been obvious,

The Reader reference states that the light source "may be of any suitable type" (column 5, lines 57-58); the only functional limitation given for the light source is that it produces light in the appropriate wavelength range. The instant disclosure states that the semiconductor light source disclosed and claimed is a commercial item (page 5, lines 18-19). It therefore would have been obvious to use this known, available light source,

known to produce light in an appropriate wavelength range, for the light source of Reader et al.

The instant specification states that the detector used is "conventional" (page 7, line 19) or is commercially available (page 7, lines 19-21). The use of conventional and commercially available detectors which detect the wavelength range being used would have been obvious.

It is known in the art to modulate the light source; see Harte et al. Note column 2, line 65 through column 3, line 6. That reference teaches that this modulation will "enable accurate filtering so that most electronic 'noise' or interference can be removed" and teaches that the device, because of the modulation, is not subject to low frequency noise. Those in the art, wishing to so reduce the effect of noise, would have found it obvious to modulate the light in any such optical system, including one which measures NO<sub>2</sub>. Note the bandpass filtering of the signal in the Harte reference so "[t]he signal-to-noise ratio is further enhanced" (column 8, lines 46-50)

Those of ordinary skill in the art could use any known components and arrangements in such a detector. As the light is generally in the blue wavelength range, using a blue enhanced detector would have been obvious. Reader et al shows the use of a reference detector (31) which receives a different wavelength range that does the measurement detector (column 5, lines 11-18). Reader teaches that the this can be accomplished by means of a pair of filters (35, 29) Other known reference signal obtaining arrangement would have been obvious given the teaching of obtaining a reference signal.

Reader et al schematically shows a heating means (12') associated with the sample chamber, and teaches that this controls the temperature and maintains it at a constant temperature (column 5, lines 35-39).

Reader et al teaches using a flow cell to detect the  $\text{NO}_2$  in the gas being directed through the flow cell, and teaches that the optical measurement disclosed will detect the  $\text{NO}_2$  but not the NO (column 1, lines 14-17). If one were interested in just the  $\text{NO}_2$  content separate from the NO content, it would have been obvious to make this known measurement without first converting the NO to  $\text{NO}_2$ .

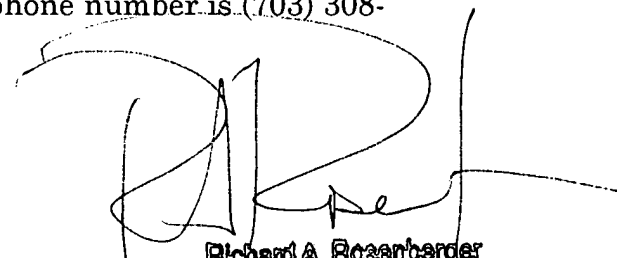
As the gas flows through such a measuring apparatus, it would have been obvious to direct the gas, after it has been measured, to any additional measuring apparatus for additional measurements which may be of interest. The purely optical measurement does not alter the gas and so the gas can be measured for additional components. The claimed additional measurement is known and is commercially available (the instant specification, page 9, lines 27-30).

3. Papers related to this application may be submitted to Group 2800 by facsimile transmission. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The fax number is (703) 308-7722.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to R. A. Rosenberger whose telephone number is (703) 308-4804.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.

R. A. Rosenberger  
29 November 2002



Richard A. Rosenberger  
Primary Examiner